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C-kit-positive pancreas islets cell of rats pancreas as a endocrine cells progenitor during alloxan diabetes

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Abstract

One of the most common markers for stem cells in pancreas is the stem cell factor receptor C-kit (CD117) that plays a main role in differentiation of progenitor endocrine cells of pancreas islets in prenatal development and persists after birth. But still the role of C-kit positive cells in islet β-cells regeneration during the diabetes mellitus type I has not been studied. That's why the aim of our work was to study the dynamic of C-kit expression in the pancreas islets during the experimental alloxan diabetes in rats. The work was made on 33 rats with the experimental diabetes. Blood glucose levels, levels of insulin and glucagon were measured. And also we studied the expression of C-kit, insulin and glucagon in rat pancreas. The results of the study showed the C-kit expression after one day of the experimental hyperglycemia. These cells were also expressed insulin and glucagon. We suppose that C-kit+-cells, which produce insulin, were enable to correct disrupted carbohydrate metabolism during alloxan diabetes.

Keywords

Diabetes mellitus, Pancreas, Progenitor cells, Stem cell factor receptor